

D6104-005

w/ #9293

Work Order ID 151098

151098

Page 1

Monday, September 12, 2016 10:32:20 AM

Item ID: DSK078

Accept

N900040100

Setup Start

NS1

Revision ID:

Item Name: D2893-1 Turning Detail

Stop

NS2

Start Date: 9/19/2016 Start Qty: 12.00

12

Cust Item ID:

Required Date: 9/29/2016 Req'd Qty: 12.00

12

Customer:

Reference:

Approvals:

Process Plan:

DAS
21
9-89

Date: SEP 14 2016 Tooling:

Date:

Run Start

NR1

QC:

Date: SPC (Y/N):

Date:

Stop

NR2

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool # Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

Draw Nbr

Revision Nbr

DSK078

Rev A

100

0.01

100

Doosan

Memo

1.04

Doosan Lathe

Turn blank as per Folio FA081
(4TH AXIS PLUG DT8492)

DAS

45

9-89

2016-9-19

110

QC2- Inspect parts off machine FAI/FAIB

0.00

110

QC

Memo

0.02

Quality Control

DAS

45

9-89

2016-9-19

120

QC8- Inspect parts - second check

0.00

120

QC

Memo

0.04

Quality Control

DAS

49

9-89

16/09/21

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :				MRB (QSI042) Approval	
Description Work Order Deviation				Disposition				Completed By	
								Lead hand / Supervisor Approval Verification	
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER :							
Misidentified ☐	Past Due ☐								

Work Order ID 151098

Monday, September 12, 2016 10:32:20 AM

151098

Page 2

Item ID: DSK078 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: D2893-1 Turning Detail
Start Date: 9/19/2016 Start Qty: 12.00 ***12*** Cust Item ID:
Required Date: 9/29/2016 Req'd Qty: 12.00 ***12*** Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
130		0.00							DAS 49 9-89
130						12			
Packaging	Memo	0.00							
Packaging	LOCATION: MAT060								16/09/21
140	QC21- Final Inspection - Work Order Release	0.00							DAS 21 9-89
140									SEP 21 2016
QC	Memo	0.20							
Quality Control									

DAS
21
9-89

SEP 21 2016

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐																																																																												
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<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th colspan="3" style="text-align: left;">Root Cause</th> <th colspan="3" style="text-align: left;">FAULT CATEGORY</th> </tr> </thead> <tbody> <tr> <td style="width:15%;">Environment ☐</td> <td style="width:15%;">No Re-verification ☐</td> <td style="width:15%;">Pressure/Forced ☐</td> <td style="width:15%;">Temperature/Cure ☐</td> <td style="width:15%;">Power Loss/Surge ☐</td> <td style="width:15%;">Positioned Wrong ☐</td> </tr> <tr> <td>Design ☐</td> <td>Operator ☐</td> <td>Bending ☐</td> <td>Set-up ☐</td> <td>Folio/Program ☐</td> <td>Outside Dimensions ☐</td> </tr> <tr> <td>Doc/Data ☐</td> <td>Offset/Setup ☐</td> <td>Centre Not Concentric ☐</td> <td>BOM/Route ☐</td> <td>Grain ☐</td> <td>Over/Under tolerance ☐</td> </tr> <tr> <td>Equip/Tooling ☐</td> <td>Supplier ☐</td> <td>Cracks ☐</td> <td>Broken/Damage/Defect ☐</td> <td>Weld ☐</td> <td>Part Incorrect ☐</td> </tr> <tr> <td>Handling/Pre ☐</td> <td>Training ☐</td> <td>Crimp/Kink/Ripple/Wave ☐</td> <td>Inspection Incomplete/Unqualified ☐</td> <td>Wrong Stock Pulled ☐</td> <td>Part Lost/Missing ☐</td> </tr> <tr> <td>Material ☐</td> <td>Use for Testing ☐</td> <td>Cuffs ☐</td> <td>Contamination ☐</td> <td>Out of Sequence ☐</td> <td>Part Moved ☐</td> </tr> <tr> <td>Internal Transport ☐</td> <td>Poor Information ☐</td> <td>Crushing ☐</td> <td>Countersink ☐</td> <td>Off-set ☐</td> <td>Drawing ☐</td> </tr> <tr> <td>Tribal Knowledge ☐</td> <td>Rushing ☐</td> <td>Heat Treat ☐</td> <td>Cut Too Short ☐</td> <td>Mislabeled ☐</td> <td>Finish ☐</td> </tr> <tr> <td>LOA ☐</td> <td>Product Improvement ☐</td> <td>Wave/Twist in Tube ☐</td> <td>Instructions Incomplete/Unclear ☐</td> <td>Fit/Function ☐</td> <td>Misread ☐</td> </tr> <tr> <td>Substation ☐</td> <td>Process Improvement ☐</td> <td>Marks/Chatter ☐</td> <td>Drill Holes ☐</td> <td>Misaligned/off center ☐</td> <td>Turning Sequence ☐</td> </tr> <tr> <td>Past Expiry Date ☐</td> <td>Manufacturing Process ☐</td> <td colspan="4" rowspan="2" style="text-align: center; vertical-align: top;">OTHER : ☐</td> </tr> <tr> <td>Misidentified ☐</td> <td>Past Due ☐</td> </tr> </tbody> </table>					Root Cause			FAULT CATEGORY			Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐	Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐	Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐	Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐	Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐	Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐	Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐	Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐	LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐	Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐	Past Expiry Date ☐	Manufacturing Process ☐	OTHER : ☐				Misidentified ☐	Past Due ☐
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Picklist Print

Monday, September 12, 2016 10:32:20 AM

Page 1

Work Order ID: 151098

151098

Parent Item: DSK078

DSK078

Parent Item Name: D2893-1 Turning Detail

Start Date: 9/19/2016

Required Date: 9/29/2016

Start Qty: 12.00

Required Qty: 12.00

Comments: IPP rev A. 08.03.13 new issue EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D6104-005		Manufactured	No				Each	23.0000		12			

D6104-005

Round Billet, 17-4

Location

Loc Qty

Loc Code

MAT043

23

144957

13

150729

10

3
9
12

DAS
45
9-89 20160919

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition			
				Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : ☐					

DART AEROSPACE LTD		Work Order:	151098
Description: Turning Detail for D2893-1		Part Number:	DSK078
Inspection Dwg: DSK078 Rev: A		Page 1 of 1	

FIRST ARTICLE INSPECTION DIMENSION SHEET

☒ **First Article**

 ☐ **Prototype**

				Record Actual Dimensions				
Dim	Min	Max	Go/No Go Gauge	1	2	3	4	5
Lathe Section								
A	2.707	2.712		2.709	2.709	2.709	2.709	2.709
B	4.946	4.966		4.958	4.958	4.958	4.958	4.958
C	3.064	3.084		3.071	3.073	3.073	3.073	3.073
D	0.718	0.738		0.728	0.728	0.728	0.728	0.728
E	0.090	0.110		0.100	0.100	0.100	0.100	0.100
F	2.934	2.954		2.941	2.943	2.943	2.943	2.943
G	2.166	2.186		2.176	2.176	2.176	2.176	2.176
H	3.890	3.910		3.899	3.899	3.899	3.899	3.899
I	0.914	0.934		0.924	0.924	0.924	0.924	0.924
J	0.022	0.042		0.032	0.032	0.032	0.032	0.032
K	0.109	0.129		0.117	0.115	0.116	0.117	0.115
L								
M								
N								
O								
P								

Measured by: DAS 45 9-89	Date: 2016-9-19
Audited by: DAS 49 9-89	Date: 16/09/21
Prototype Approval:	Date:

Rev	Date	Change	Revised by	Approved
A	08.04.22	New Issue	KJ/JLM	

DART AEROSPACE LTD		Work Order:	151098
Description: Turning Detail for D2893-1		Part Number:	DSK078
Inspection Dwg: DSK078		Rev: A	Page 1 of 1

FIRST ARTICLE INSPECTION DIMENSION SHEET

☒ First Article ☐ Prototype

				Record Actual Dimensions				
Dim	Min	Max	Go/No Go Gauge	26	27	28	29	310
Lathe Section								
A	2.707	2.712		2.705	2.709	2.709	2.709	2.709
B	4.946	4.966		4.960	4.960	4.960	4.960	4.960
C	3.064	3.084		3.073	3.073	3.073	3.073	3.073
D	0.718	0.738		0.728	0.728	0.728	0.728	0.728
E	0.090	0.110		0.100	0.100	0.100	0.100	0.100
F	2.934	2.954		2.943	2.943	2.943	2.943	2.943
G	2.166	2.186		2.176	2.176	2.176	2.176	2.176
H	3.890	3.910		3.899	3.899	3.899	3.899	3.899
I	0.914	0.934		0.924	0.924	0.924	0.924	0.924
J	0.022	0.042		0.032	0.032	0.032	0.032	0.032
K	0.109	0.129		0.116	0.118	0.118	0.119	0.119
L								
M								
N								
O								
P								

Measured by:	DAS 45 9-89	Date:	2016-9-19
Audited by:	49 9-89	Date:	16/09/21
Prototype Approval:		Date:	

Rev	Date	Change	Revised by	Approved
A	08.04.22	New Issue	KJ/JLM	

DART AEROSPACE LTD		Work Order:	151098
Description: Turning Detail for D2893-1		Part Number:	DSK078
Inspection Dwg: DSK078 Rev: A		Page 1 of 1	

FIRST ARTICLE INSPECTION DIMENSION SHEET

☒ First Article ☐ Prototype

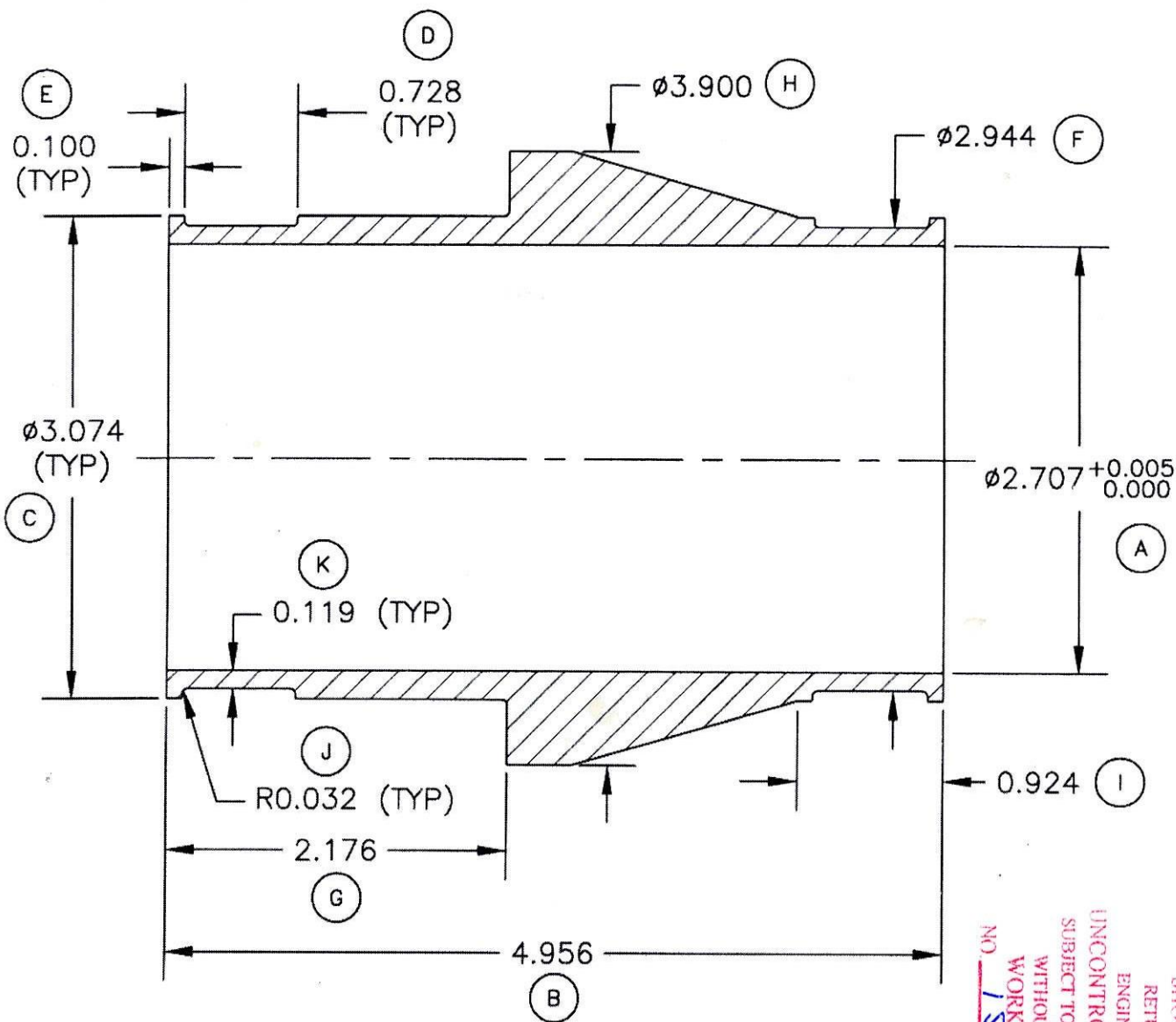
Dim	Min	Max	Go/No Go Gauge	Record Actual Dimensions				
				11	12	13	14	15
Lathe Section								
A	2.707	2.712		2.709		3.708		
B	4.946	4.966		4.958		4.958		
C	3.064	3.084		3.073		3.058		
D	0.718	0.738		0.728		0.728		
E	0.090	0.110		0.100		0.100		
F	2.934	2.954		2.944		2.928		
G	2.166	2.186		2.176	2.176	2.176		
H	3.890	3.910		3.899		3.900		
I	0.914	0.934		0.924	0.924	0.924		
J	0.022	0.042		0.032	0.032	0.032		
K	0.109	0.129				0.110		
L								
M								
N								
O								
P								

Measured by:	DAS 45	Date:	2016-9-19
Audited by:	DAS 49	Date:	10/09/21
Prototype Approval:	9-89	Date:	

Rev	Date	Change	Revised by	Approved
A	08.04.22	New Issue	KJ/JLM	



DESIGN H	DRAWN BY H	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED H	APPROVED H	DRAWING NO. DSK 078	REV. A SHEET 1 OF 1
DATE 03.05.20		TITLE TURNING DETAIL FOR D2893-1	SCALE 1:1
A	03.05.20	NEW ISSUE	



D2893-1 TURNING DETAIL

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 151098
16-09-14
MCS

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